

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method comprising mixing a polyisocyanate component with a polyol component in the presence of at least one catalyst for the reaction of a polyol or water with a polyisocyanate and subjecting the mixture to conditions sufficient to cure to form a rigid polyurethane foam wherein (a) the polyisocyanate component contains an isocyanate-terminated prepolymer made by reacting an excess of an organic polyisocyanate with (i) at least one polyol and (ii) at least one hydroxyl-functional acrylate, (b) the polyol component comprises an effective amount of a blowing agent and isocyanate-reactive materials comprising a hydrophobic polyol biopolymer comprising an ester of a fatty acid and glycerol, the polyol component further comprising a second polyol derived from a petrochemical, being a non-biopolymer and wherein the biopolymer is present in an amount up to 40 wt% of the total polyol component, and the biopolymer being present in an amount less than the second polyol; (c) the ratio of isocyanate groups in the polyisocyanate component to the number of isocyanate-reactive groups in the polyol component is less than 1:1; and (d) the polyisocyanate component has a functionality of between about 2.0 and about 4.0.

2. (Original) The invention according to claim 1, wherein the polyurethane foam has a bulk density in the range of about 2 to about 40 pounds per cubic foot.

3. (Original) The invention according to claim 1, wherein the volume ratio of the polyisocyanate component to polyol component is about 1:1.

4. (Original) The invention according to claim 1, wherein the hydroxy-functional acrylate is a methacrylate.

5. (Original) The invention according to claim 1, wherein at least one polyol in the polyol component contains a tertiary amine group.

6. (Original) The invention according to claim 1, wherein the catalyst includes a reactive amine catalyst.

7. (Original) The invention according to claim 1, wherein the blowing agent is water or a chemical blowing agent that releases CO₂.

8. (Original) The invention according to claim 1, wherein the organic polyisocyanate is MDI or a polymeric MDI.

9. (Original) The invention according to claim 1, wherein the foam is formed into an automotive component.

10. (Currently Amended) A product comprising a rigid polyurethane foam formed by mixing a polyisocyanate component with a polyol component in the presence of at least one catalyst for the reaction of a polyol or water with a polyisocyanate and subjecting the mixture to conditions sufficient to cure to form a rigid polyurethane foam ~~having a decreased water absorption characteristic~~, wherein (a) the polyisocyanate component comprises an isocyanate-terminated prepolymer made by reacting an excess of an organic polyisocyanate with (i) at least one polyol and (ii) at least one hydroxyl-functional acrylate, (b) the polyol component contains an effective amount of a blowing agent and isocyanate-reactive materials that include at least one hydrophobic biopolymer polyol comprising an ester of a fatty acid and glycerol, the polyol component further comprising a second polyol derived from a petrochemical, and wherein the biopolymer is present in an amount up to 40 wt% of the total polyol component, and the

biopolymer being present in an amount less than the second polyol, and wherein the second polyol comprises at least one of an alkyline glycol, glycoether, glycerine, trimethylolpropane, tertiary amine-containing polyol, triisopropanolamine, polyether polyol or polyester polyol; (c) the ratio of isocyanate groups in the polyisocyanate component to the number of isocyanate-reactive groups in the polyol component is less than 1:1; and (d) the polyisocyanate component has a functionality of between about 2.0 and about 4.0.

11. (Original) The invention according to claim 10, wherein the polyurethane foam has a bulk density in the range of about 2 to about 40 pounds per cubic foot.

12. (Original) The invention according to claim 10, wherein the volume ratio of the polyisocyanate component to polyol component is about 1:1.

13. (Original) The invention according to claim 10, wherein the hydroxy-functional acrylate is a methacrylate.

14. (Original) The invention according to claim 10, wherein at least one ployol in the polyol component contains a tertiary amine group.

15. (Original) The invention according to claim 10, wherein the catalyst includes a reactive amine catalyst.

16. (Original) The invention according to claim 10, wherein the blowing agent is water or a chemical blowing agent that releases CO₂.

17. (Original) The invention according to claim 10, wherein the organic polyisocyanate is MDI or a polymeric MDI.

18. (Original) The invention according to claim 10, wherein the foam is formed into an automotive component.

19. (Currently Amended) A product comprising a rigid polyurethane foam formed by mixing a polyisocyanate component with a polyol component in the presence of at least one catalyst for the reaction of a polyol or water with a polyisocyanate and subjecting the mixture to conditions sufficient to cure to form a rigid polyurethane foam having a bulk density in the range of about 2 to about 40 pounds per cubic foot, wherein (a) the polyisocyanate component comprises an isocyanate-terminated prepolymer made by reacting an excess of an organic polyisocyanate with (i) at least one polyol and (ii) at least one hydroxy-functional acrylate, (b) the polyol component contains an effective amount of a blowing agent and isocyanate-reactive materials that include at least one hydrophobic biopolymer polyol comprising an ester of a fatty acid and glycerol, the polyol component further comprising a second polyol derived from a petrochemical, being a non-biopolymer and wherein the biopolymer is present in an amount up to 40 wt% of the total polyol component, and the biopolymer being present in an amount less than the second polyol; (c) the ratio of isocyanate groups in the polyisocyanate component to the number of isocyanate-reactive groups in the polyol component is less than 1:1, wherein the volume ratio of the polyisocyanate component to polyol component is about 1:1; and (d) the polyisocyanate component has a functionality of between about 2.0 and about 4.0.

20. (Original) The invention according to claim 19, wherein the hydroxy-functional acrylate is a methacrylate.

21. (Original) The invention according to claim 19, wherein at least one polyol in the polyol component contains a tertiary amine group.

22. (Original) The invention according to claim 19, wherein the catalyst includes a reactive amine catalyst.

23. (Original) The invention according to claim 19, wherein the blowing agent is water or a chemical blowing agent that releases CO₂.

24. (Original) The invention according to claim 19, wherein the organic polyisocyanate is MDI or a polymeric MDI.

25. (Original) The invention according to claim 19, wherein the foam is formed into an automotive component.

26-47 (Canceled).

48. (Previously Presented) The invention according to claim 1 wherein the ester is from at least one of castor oil or soybean oil.

49. (Previously Presented) The invention according to claim 1 further comprising using the rigid polyurethane foam as a reinforcing foam or crash support foam in an automobile.

50. (Previously Presented) The invention according to claim 1 further comprising using the rigid polyurethane foam to make a headliner, doorframe, pillar or rocker panel in an automobile.

51. (Previously Presented) A method as set forth in claim 1 wherein the second polyol comprises polyether polyol comprising co-polymerized styrene and acrylonitrile.

52. (Previously Presented) A method as set forth in claim 1 wherein the second polyol comprises polyether aromatic amine polyol.

53. (Previously Presented) A method as set forth in claim 19 wherein the second polyol comprises polyether polyol comprising co-polymerized styrene and acrylonitrile.

54. (Previously Presented) A method as set forth in claim 19 wherein the second polyol comprises polyether aromatic amine polyol.